

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent of:

Daniel P. Little *et al.*

Patent No.: 7,285,422

Filing Date: January 23, 1997

Title: SYSTEMS AND METHODS FOR  
PREPARING AND ANALYZING LOW  
VOLUME ANALYTE ARRAY  
ELEMENTS

Examiner: Yelena G. Gakh

Group Art Unit: 1743

Conf. No.: 5922

Mail Stop PGPUB  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REQUEST FOR CERTIFICATE OF CORRECTION**

Please certify the attached Certificate of Correction for the above-referenced patent. Typographical errors were published in the printed version of claims 7 and 30 of U.S. Patent No. 7,285,422 due to an oversight by the United States Patent and Trademark Office. The corrections are listed on the attached Certificate of Correction. Also attached for reference is a copy of Claim Amendment filed on January 17, 2007 and the Examiner's Amendment mailed with the Notice of Allowance on June 13, 2007.

In view of the foregoing, it is believed that no fee is required for filing this request, but should a fee be required, the Office is authorized to charge an appropriate fee for the filing of this petition to Deposit Account No. **50-3473**.

Respectfully submitted,

Date: March 11, 2008

By: /Bruce Grant/

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO. : 7,285,422

APPLICATION NO.: 08/786,988

ISSUE DATE : October 23, 2007

INVENTOR(S) : Daniel P. LITTLE, Maryanne J. O'DONNELL-MALONEY, Charles R. CANTOR, Hubert  
KÖSTER

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Claim 7, please insert the word -- group -- after "selected from the" and before "consisting of a flat surface".

In Claim 30, please insert the word -- a -- after "dispenser comprises" and before "vesicle that comprises".

Please see the attached copy of the Claim Amendment filed on January 17, 2007 and Examiner's Amendment mailed with the Notice of Allowance on June 13, 2007.

### MAILING ADDRESS OF SENDER (Please do not use customer number below):

Bruce D. Grant  
Grant Anderson LLP c/o PortfoliоIP  
P.O. Box 52050, Minneapolis, MN 55402

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

## AMENDMENTS

### Amendments to the Claims:

Please cancel claims 108-134, 139, 140 and 144-146 without prejudice or disclaimer. Please enter new claims 147-184 as set forth in the complete listing of the claims hereafter. This complete listing of the claims replaces previous claim listings.

1-146 (Cancelled).

147 (New). A process for preparing a substrate having an array of spots having matrix for matrix-assisted laser-desorption ionization (MALDI) mass spectrometry and no analyte, which comprises:

(a) depositing a defined and controlled 0.2 to 20 nanoliter volume of a solution comprising 3-hydroxypicolinic acid matrix, an evaporating solvent and no analyte at a plurality of discrete locations on the surface of a substrate; and

(b) evaporating the solvent, thereby forming an array of spots on the surface of the substrate comprising the matrix and no analyte.

148 (New). The process of claim 147, wherein the substrate comprises material selected from the group consisting of silica, glass, cellulose, silicon, metal, plastic, polymer and metal-grafted polymer.

149 (New). The process of claim 147, wherein the substrate comprises a flat surface, a flat surface with pits, a solid or porous bead, a membrane or a pin.

150 (New). The process of claim 147, wherein the substrate comprises a flat surface.

151 (New). The process of claim 147, wherein the substrate comprises silicon.

152 (New). The process of claim 147, wherein the substrate comprises a metal.

153 (New). The process of claim 147, wherein the substrate comprises a plastic.

154 (New). The process of claim 147, wherein the substrate comprises a membrane.

155 (New). The process of claim 147, wherein the substrate comprises a metal-grafted polymer.

156 (New). The process of claim 147, wherein the substrate is chemically functionalized.

157 (New). The process of claim 147, wherein the substrate is chemically functionalized with beads.

158 (New). The process of claim 147, wherein the substrate is chemically functionalized with a dendritic material.

159 (New). The process of claim 147, wherein the substrate is a chip.

160 (New). The process of claim 147, wherein the substrate is a silicon chip.

161 (New). The process of claim 147, wherein each spot is a flat disk.

162 (New). The process of claim 147, wherein the spot size is defined by square dimensions of 800 micrometers by 800 micrometers or less.

163 (New). The process of claim 147, wherein the spot size is defined by square dimensions of 450 micrometers by 450 micrometers or less.

164 (New). The process of claim 147, wherein each spot consists essentially of the matrix after the solvent has evaporated.

165 (New). The process of claim 147, wherein each spot consists of the matrix after the solvent has evaporated.

166 (New). The process of claim 147, wherein the solvent comprises water.

167 (New). The process of claim 166, wherein the solvent is water.

168 (New). The process of claim 147, wherein the solvent comprises  $\text{CH}_3\text{CN}$ .

169 (New). The process of claim 168, wherein the solvent is 50%  $\text{CH}_3\text{CN}$ .

170 (New). The process of claim 147, wherein the solution comprising the matrix consists essentially of the matrix and the evaporating solvent.

171 (New). The process of claim 147, wherein the solution comprising the matrix consists of the matrix and the evaporating solvent.

172 (New). The process of claim 147, wherein the solution comprising the matrix is a saturated matrix solution.

173 (New). The process of claim 147, wherein the solution comprising the matrix is a diluted matrix solution.

174 (New). The process of claim 147, wherein the solution is dispensed by an automated dispenser.

175 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle having a chamber and a transducer element for ejecting fluid from the chamber.

176 (New). The process of claim 174, wherein the transducer element is selected from the group consisting of piezoelectric, electric, electrorestrictive, magnetorestrictive, electromechanical transducers and the like.

177 (New). The process of claim 175, wherein the transducer element is a piezoelectric transducer.

178 (New). The process of claim 147, wherein the automated dispenser deposits the solution without touching the surface of the substrate.

179 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises an interior chamber suitable for carrying a solution.

180 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises a pin having a chamber of sufficient narrow bore to allow the chamber to at least partially fill with a solution by capillary action.

181 (New). The process of claim 147, wherein the automated dispenser deposits the solution by contacting the surface of the substrate.

182 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises a solid shaft of material.

183 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that is rastered over the surface of the substrate.

184 (New). The process of claim 147, wherein the automated dispenser comprises a plurality of vesicles in an array.

**Notice of Allowability**

Application No.

08/786,988

Examiner

Yelena G. Gakh, Ph.D.

Applicant(s)

LITTLE ET AL.

Art Unit

1743

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 01/17/07 and Declaration filed on 12/21/06.
2. ☒ The allowed claim(s) is/are 147-169, 172, 173, 175-178 and 180-184.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 02/15/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bruce Grant on 03/01/07.

The application has been amended as follows:

**In claim 147** at the end of step (a), after "a substrate", insert -- by an automated dispenser --.

**In claim 149**, after "wherein the substrate" replace [comprises] with -- is selected from the group consisting of --.

**In claims 150 and 154**: replace [147] with -- 149 --.

**In claims 151-153 and 155**: replace [147] with -- 148 --.

**In claims 157 and 158**: replace [147] with -- 156 --.

**In claim 160**: replace [147] with -- 159 --.

**In claim 165**: replace [147] with -- 164 --.

**Delete claims 170, 171, 174 and 179.**

**In claim 176**: replace [174] with -- 175 --.

**In claim 177**: replace [175] with -- 176 --.

**Claims 147-169, 172-173, 175-178 and 180-184** are allowed. The new numbering of claims is 1 through 34.

The following is an examiner's statement of reasons for allowance: the prior art does not teach or fairly suggest a process for preparing a substrate having an arrays of spots for MALDI by depositing a defined and controlled 0.2-20 nL solution of 3-hydroxypicolinic matrix that does not comprising an analyte, and evaporating the solvent. The application was also reconsidered in light of the Declaration under 37 CFR 1.132 by Thomas Becker filed on 12/21/06, which was persuasive.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

3/1/07



**YELENA GAKH  
PRIMARY EXAMINER**